Docket No.: E0295.70201US00
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Stephen J. Todd et al.
Serial No.:	10/762,036
Confirmation No.:	3938
Filed:	January 21, 2004
For:	METHODS AND APPARATUS FOR INDIRECTLY IDENTIFYING A RETENTION PERIOD FOR DATA IN A STORAGE SYSTEM
Examiner:	E.P. LeRoux
Art Unit:	2161

REQUEST FOR RECONSIDERATION

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

In response to the Office Action mailed July 9, 2007, Applicants respectfully request reconsideration.

I. Summary of Telephone Interview with the Examiner

Initially, Applicants appreciate the courtesies extended by Examiner LeRoux during the telephone conference on September 19, 2007, with Richard Giunta and Scott Gerwin. The substance of this interview is summarized herein.

Applicants' representatives began the interview by providing to the Examiner a general overview of Applicants' invention and an example of one embodiment.

Applicants' representatives explained that embodiments of the invention relate to retention classes, and explained that a retention class is a group of content units that all have the same retention period. Applicants' representatives provided an example of one embodiment in which there is a retention class called "e-mail" that has an associated retention period of three years from time of storage. Applicants' representatives explained that all content units belonging to the

retention class (e.g., e-mails stored in the storage system) would have a retention period of three years from time of storage. In conventional systems, if an administrator of the storage system desired to change the retention period of e-mails stored in the system (e.g., to five years from the date of storage), then the administrator would have to locate each e-mail and update its retention period individually. By grouping content units together in a retention class and associating a retention period with the retention class, however, a retention period for multiple content units may be more quickly and efficiently changed. In the "e-mail" class example, if a user desired to retain e-mails for five years instead of three, then the administrator would locate the "e-mail" class in the system and change the retention period for the class, which would then apply to every unit of data in the "e-mail" class.

The Examiner appreciated the concept of a retention class, but questioned whether the term "retention class" as used in the pending claims is the best descriptor. Specifically, the Examiner questioned whether the term "retention class" could be interpreted to mean the same thing as the term "retention period" and asked whether there was a better term that could be used to capture the concept of a grouping of content units that all have the same retention period. Applicants' representatives indicated that they would review the specification to determine if there were other terms used, but if not would prefer to retain the term "retention class" because that is the term used in the specification to describe a grouping of content units that have the same retention period. In response, the Examiner requested that Applicants, in this response, highlight examples of portions of the specification that indicate that a "retention class" is a grouping of content units that have the same retention period.

Applicants draw the Examiner's attention to Figure 8 of Applicants' disclosure, and the accompanying description from page 31, line 3, through page 32, line 21. Therein, Applicants disclose, for example, that a retention class is information stored in a storage system which may be used "to define retention periods for units of data" such that "each unit of data in the class may identify its retention period as belonging to the class, but the value for the class may be stored elsewhere (Page 31, lines 16-19)." Further, the specification states that "when a host sends a request to store [data] on the storage system, the host may indicate a retention class for the unit of data (Page 31, lines 23-24)."

The Examiner indicated he appreciated the concept of a retention class, and would reconsider the rejection. Thus, during the interview, there as no discussion of the substance of the prior art or of how the claims distinguish. The claims are believed to distinguish over the references for the reasons discussed below.

II. Claim Rejections under 35 U.S.C. §103

Claims 29, 30, 32-46, 48-62, and 64-91 are rejected under 35 U.S.C. §103(a) as purportedly being obvious over Published U.S. Patent Application No. 2005/0055518 ("Hochberg") in view of Published U.S. Patent Application No. 2004/0153844 ("Ghose"). Applicants respectfully traverse the rejection.

A. Claims 29-30 and 32-44

Independent claim 29 is directed to a method of processing data in a computer system comprising at least one host and at least one storage system. The method comprises acts of: (A) receiving a request, from the host, to delete a unit of data stored on the storage system; (B) determining whether a previously-defined retention period for the unit of data has expired by performing acts of; (B1) retrieving first information, associated with the unit of data, that identifies a manner of accessing second information specifying the previously-defined retention period; and (B2) using the first information to retrieve the second information specifying the previously-defined retention period; and (C) when it is determined in the act (B) that the retention period for the unit of data has not expired, denying the request to delete the unit of data, wherein the first information is information identifying a retention class to which the unit of data belongs, wherein the second information is a retention period associated with the retention class, and wherein the method further comprises an act of maintaining, on the at least one storage system, a record associating the retention period with the retention class.

The combination of Hochberg and Ghose does not teach or suggest all limitations of claim 29. For example, neither Hochberg nor Ghose teaches or suggests a method of processing data "wherein the first information is information identifying a retention class to which the unit of data belongs, wherein the second information is a retention period associated with the retention class,

and wherein the method further comprises an act of maintaining, on the at least one storage system, a record associating the retention period with the retention class." The Office Action concedes, on page 3, that Hochberg does not teach or suggest this limitation, but asserts that Ghose does by virtue of the timeWindow attribute.

Applicants respectfully disagree that Ghose teaches these limitations, as the timeWindow attribute of Ghose is unrelated to a retention class having an associated retention period. Specifically, Ghose is directed to a method and system for managing errors in a storage area network (Ghose, abstract). One of the structures taught by Ghose for handling errors is the Threshold class, which may identify errors that must occur multiple times before the system acts upon the errors (¶0053). The timeWindow attribute "provides a time period from beginning to end to measure threshold amounts" (¶0053). In other words, the timeWindow attribute provides the setting for when Ghose's system should be monitoring for errors specified in the eventCode attribute of the Threshold class.

For example, according to Ghose's teachings, a storage system in a storage area network may recognize that changes in network conditions (e.g., congestion) may lead to some storage servers being detected as unreachable in a first connection attempt while a connection may be established in a second connection attempt. The storage system may therefore specify that an error which is thrown when a destination storage server is unreachable must occur at least three times within 10 seconds (i.e., a threshold number of times in a specified time period). If the "unreachable destination" error is only thrown once or twice in a 10-second period, then the errors are not handled in any way and the counter is reset. However, if the error occurs three or more times in a 10-second period, then the error may be handled, such as by notifying a user of a problem in the network. Thus, the timeWindow attribute in the example would be ten seconds. There is no teaching or suggestion in Ghose of retaining data for a specified period.

In contrast, Applicants' claim 29 recites a method including acts of retrieving first and second information as part of an act of "determining whether a previously-defined retention period for the unit of data has expired," wherein the first information is "a retention class to which the unit of data belongs" and the second information is "a retention period associated with the retention class." Nowhere does Ghose teach or suggest "a retention class" or "a retention period associated

with the retention class," but rather teaches a class of error for which a system may monitor within a specified time window. As Ghose fails to teach a retention class or a retention period, Ghose clearly does not teach an act of "maintaining ... a record associating the retention period with the retention class," as recited in claim 29.

Therefore, for at least these reasons, claim 29 patentably distinguishes over any combination of Hochberg and Ghose and is in allowable condition. Claims 30 and 32-44 depend from claim 29 and are allowable for at least the same reasons.

B. Claims 45-91

Each of the other independent claims (i.e., claims 45, 61, 80, and 86) includes limitations that similarly distinguish over any combination of Hochberg and Ghose. For example:

- independent claim 45 recites, *inter alia*, at least one computer readable medium encoded with instructions "wherein the first information is information identifying a retention class to which the unit of data belongs, wherein the second information is a retention period associated with the retention class, and wherein the method further comprises an act of maintaining, on the at least one storage system, a record associating the retention period with the retention class;"

- independent claim 61 recites, *inter alia*, a storage system "wherein the first information is information identifying a retention class to which the unit of data belongs, wherein the second information is a retention period associated with the retention class, and wherein the at least one controller is adapted to maintain, on the storage system, a record associating the retention period with the retention class;"

- independent claim 80 recites, *inter alia*, "a computer system comprising at least one host and at least one storage system that stores a plurality of data units belonging to a retention class, wherein the retention class specifies a retention period for each of the plurality of data units belonging to the retention class;" and

- independent claim 86 recites, *inter alia*, "at least one storage system that stores a plurality of data units belonging to a retention class, wherein the retention class specifies a retention period for each of the plurality of data units belonging to the retention class."

As discussed above in conjunction with claim 29, the Office Action concedes that Hochberg does not teach or suggest a retention class or a retention period associated with the retention class, and instead relies on Ghose's timeWindow attribute. Ghose's timeWindow attribute, however, provides only a setting for when Ghose's system should be monitoring for errors specified in the eventCode attribute of a Threshold class. There is no teaching or suggestion in Ghose of retaining data for a specified period.

For at least these reasons, claims 45, 61, 80, and 86 patentably distinguish over any combination of Hochberg and Ghose and are in allowable condition. Claims 46, 48-60, 62, 64-79, 81-85, and 87-91 depend from claims 45, 61, 80, and 86 and are allowable for at least the same reasons.

CONCLUSION

In view of the foregoing amendments and remarks, this application should now be in condition for allowance. A notice to this effect is respectfully requested. If the Examiner believes, after this amendment, that the application is not in condition for allowance, the Examiner is requested to call the Applicants' representative at the telephone number indicated below to discuss any outstanding issues relating to the allowability of the application.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicants hereby request any necessary extension of time. If there is a fee occasioned by this response, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 23/2825.

Dated: October 5, 2007

Respectfully submitted,

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